Saskatchewan
Highways and
Transportation

2006 Ferry Traffic and Seasonal/Winter Roads

Annual Report

Infrastructure and Land Branch
Policy and Programs Division

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Executive Summary

This report summarizes traffic data collected at the 12 cable-stayed ferries and one free swimming ferry barge operated by the Department of Highways and Transportation during 2006. The report provides an analysis of passenger and vehicle volumes as well as traffic composition. Information about four seasonal roads operated by the Department is also included.

The main findings of the 2006 report are listed below.

- The ferry system operated below the ten year average for traffic levels.
- The 2006 ferry operating season length was slightly shorter than in the 2005 season.
- The total amount of down time reported by all ferries was lower than in 2005. Eight of the ferries reported no down time at all.
- The Riverhurst ferry was shut down for a total of 1111 hours or 29.8% of the operating season because of a series of mechanical problems. The longest period of shutdown time was 18 days in May and June.
- Three other ferries, at Lemsford, Estuary, and Lancer, were shut down for a few days in June because of high water levels.
- The 2006 ADT was 3% higher than the 2005 ADT.
- The 2006 ADT at Clarkboro and Riverhurst increased by over 10% and by over 5% at Paynton, Fenton, and Lancer compared with the 2005 ADT.
- The 2006 ADT at Cecil and Lemsford dropped by over 5% compared with the 2005 ADT.
- The Clarkboro ferry had the highest traffic volume.
- Only the Paynton, Cecil, and Lancer ferries had increased truck percentages in 2006 compared with 2005.
- The Riverhurst ice road did not operate during 2006.

The 2006 report recommends:

- When the operating agreement for the Wollaston Barge ferry is renegotiated, the operators be required to collect passenger volumes and to use the same vehicle classification system as the other ferries. The Traffic Engineers are prepared to assist the Wollaston Barge operators to change their vehicle classification system. The assistance could include a visit to the ferry if required.

1.0 Introduction

This annual report provides a summary and analysis of the traffic using the provincial ferry system in 2006. Traffic data is reported for the thirteen Department owned ferry sites in 2006. This report examines vehicle types and historic traffic for each ferry. Useful insights into the function of each ferry can be obtained by examining the distribution and composition of ferry traffic. Passenger data for twelve of the ferry sites and operational information about the four seasonal/winter roads are also included in this report.

2.0 Background

The Department operated twelve cable-stayed ferries and one free swimming ferry barge during 2006. Cable-stayed ferries operated on the North Saskatchewan and South Saskatchewan Rivers and on Lake Diefenbaker. The single free swimming ferry operates on Wollaston Lake to serve the community of Wollaston Lake. Other than replacing the Cumberland ferry with a bridge in 1996, the ferry system has not changed since responsibility for the system was moved to the Department in 1992. Ferry locations are shown in Table I below.

Table I. Ferry Locations

Ferry	Location	Department Region
Clarkboro	South Saskatchewan River	Central Region
Riverhurst	Lake Diefenbaker	Southern Region
Paynton	North Saskatchewan River	Central Region
Weldon	South Saskatchewan River	Northern Region
St. Laurent	South Saskatchewan River	Central Region
Cecil	North Saskatchewan River	Northern Region
Hague	South Saskatchewan River	Central Region
Wingard	North Saskatchewan River	Central Region
Lemsford	South Saskatchewan River	Southern Region
Estuary	South Saskatchewan River	Southern Region
Fenton	South Saskatchewan River	Northern Region
Lancer	South Saskatchewan River	Southern Region
Wollaston Barge	Wollaston Lake	Northern Region

Ferry traffic data was collected by the ferry operators and forwarded to the traffic engineers, who analyzed and compiled this annual report. The vehicle classification forms used by ferry operators are shown in Appendix A.

During the winter months, the Department operated four seasonal/winter roads, which have a total length of approximately 458 km. These roads provide access to isolated communities and seasonal industrial activities. The operational periods of the roads vary considerably from year to year because of weather conditions. Seasonal/winter road locations are shown in Table II below.

Table II. Seasonal/Winter Road Locations

Road	Location	Length (km)	Region
Cumberland House	Hwy 9 to Cumberland House	52	Northern Region
Riverhurst	Hwy 42 across Lake Diefenbaker	2	Southern Region
Wollaston Lake	Hwy 905 to Wollaston Lake	46	Northern Region
Athabasca	Points North Landing to Uranium City	358	Northern Region

The locations of the ferries and seasonal/winter roads, including ice crossings, are shown on the map on the following page.

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Ferry and Seasonal/Winter Road Locations

- Ferry Location
- Ice Crossing
- Seasonal Road
- Winter Road

3.0 Ferry Operating Seasons

All ferries, except the Riverhurst ferry and the Wollaston Barge ferry, operated 17 hours per day between the hours of 7:00 am and midnight. The Wollaston Barge ferry operated when a trip was booked, and the Riverhurst ferry operated 24 hours per day. Ferries did not run at times because of mechanical failure, bad weather or poor river conditions. Table III below summarizes the 2006 operational season including downtime at all ferries in the province. Details of the downtime periods and their causes are shown in Appendix B. The 2006 operating season was slightly shorter than in 2005, but the total amount of down time reported by all the ferries was significantly lower than in 2005. The main reason for the decrease was the lower occurrence of high water conditions.

Table III. 2006 Ferry Operating Season Statistics

Ferry	Season				Out of Service	
	Opening	Closing	Length (days)	Operating Hours	Hours	Percent
Clarkboro	Apr 14	Nov 9	209	3553	0	0.0
Payton	Apr 25	Oct 30	188	3196	0	0.0
Riverhurst	Apr 27	Dec 2	219	2612	1111	29.8
Weldon	May 2	Oct 31	182	3094	0	0.0
St. Laurent	Apr 21	Oct 31	193	3281	0	0.0
Cecil	Apr 28	Oct 31	186	3162	0	0.0
Wingard	Apr 22	Oct 30	191	3247	0	0.0
Lemsford	Apr 17	Oct 30	196	3271.5	51	1.5
Hague	Apr 24	Nov 8	198	3366	0	0.0
Fenton	May 4	Oct 31	180	3060	0	0.0
Estuary	Apr 19	Oct 30	194	3144	154	4.7
Lancer	Apr 17	Oct 31	197	3248	95	2.8
Wollaston Barge	Jun 5	Oct 17	134		24	0.7

4.0 Volume, Passenger and Classification Summaries

Table IV below summarizes the 2006 monthly traffic at the ferry sites. Historic traffic volumes for these ferries are shown in Appendix C. The average number of vehicles using the ferry per day is represented by the Average Daily Traffic (ADT). Historic ADT is shown in Appendix D. ADT at the Riverhurst ferry and Wollaston Barge ferry should not be directly compared to other ferries. The Riverhurst ferry operated 24 hours a day whereas the other cable-stayed ferries operated 17 hours a day. The Riverhurst ferry is also the only ferry that is located on a provincial highway.

Table IV. Monthly Ferry Traffic Volumes for the 2006 Season

Ferry	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total	ADT
Clarkboro	4,338	9,846	10,967	11,121	12,146	9,599	9,326	903	0	68,246	327
Paynton	748	4,353	5,086	6,480	5,850	4,684	4,551	0	0	31,752	169
Riverhurst	14	2,899	2,490	6,159	4,079	3,185	2,404	1,511	0	22,741	125
Weldon	0	4,004	5,404	4,253	4,440	4,170	3,866	0	0	26,137	144
St. Laurent	526	2,202	2,298	4,519	2,655	2,353	1,997	0	0	16,550	86
Cecil	175	2,040	1,961	2,449	2,519	2,055	1,698	0	0	12,897	69
Wingard	337	1,421	1,511	2,421	2,312	1,509	1,387	0	0	10,898	57
Lemsford	422	1,156	1,188	1,671	1,650	1,065	1,266	0	0	8,418	44
Hague	341	1,774	1,690	1,663	1,663	1,367	1,197	77	0	9,772	49
Fenton	0	1,163	1,319	1,583	1,715	1,347	1,392	0	0	8,519	47
Estuary	355	998	850	1,853	1,549	1,067	1,216	0	0	7,888	43
Lancer	429	1,109	898	1,513	1,425	1,026	1,090	0	0	7,490	39
Wollaston Barge	0	0	131	141	163	164	71	0	0	670	5
Totals	**7,685**	**32,965**	**35,793**	**45,826**	**42,166**	**33,591**	**31,461**	**2,491**	**0**	**231,978**	

Table V summarizes the 2006 monthly number of passengers for the cable-stayed ferry sites. Historic passenger volumes for these ferries are shown in Appendix E.

Table V. Monthly Ferry Passenger Volumes for the 2006 Season

Ferry	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Clarkboro	6962	14905	17189	18847	19141	14904	14117	1377	0	107442
Paynton	1124	241	8611	11371	10297	7828	7417	0	0	46889
Riverhurst	18	5319	4405	12072	8125	5717	4060	2497	0	42213
Weldon	0	8030	10120	9352	9395	8290	7664	0	0	52851
St. Laurent	1052	4246	4909	9952	5432	4467	3839	0	0	33897
Cecil	314	3418	3475	4903	4586	3487	2869	0	0	23052
Wingard	713	3050	3375	6077	5493	3081	2936	0	0	24725
Lemsford	680	1890	2076	3129	3105	1769	2059	0	0	14708
Hague	555	2969	2752	2972	2624	2214	1676	123	0	15885
Fenton	0	1967	2181	2929	2949	2253	2062	0	0	14341
Estuary	619	1872	1518	3384	2890	1923	2060	0	0	14266
Lancer	731	1799	1389	2460	2454	1935	1894	0	0	12662
Totals	**12,768**	**49,706**	**62,000**	**87,448**	**76,491**	**57,868**	**52,653**	**3,997**	**0**	**402,931**

Passenger volumes were first recorded in 2000, except for Riverhurst and St. Laurent where volumes have been recorded since 1996 and 2003 respectively.

Ferry operators record the type of vehicles using the ferries. The breakdown of vehicle types is summarized in the charts below. The Wollaston Barge ferry is not included in these graphs because it uses a unique classification scheme.

Chart 4.0A 2006 Straight Trucks by Location

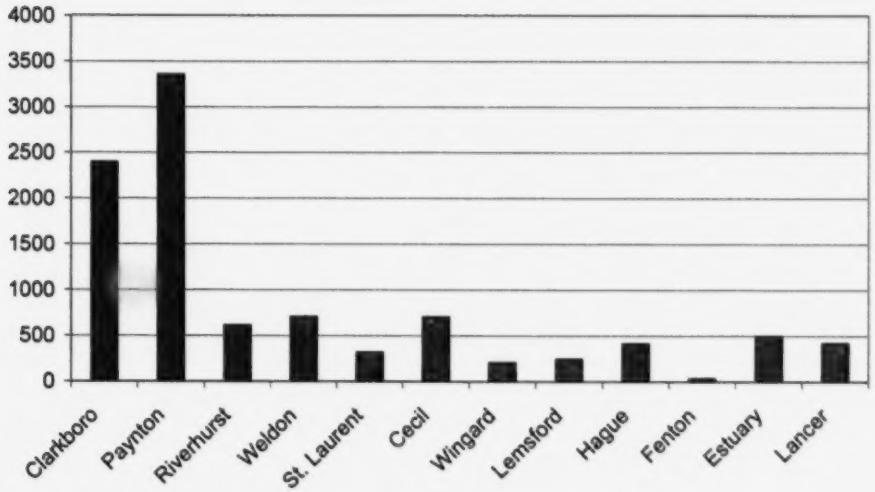


Chart 4.0B 2006 Single Trailer Trucks by Location

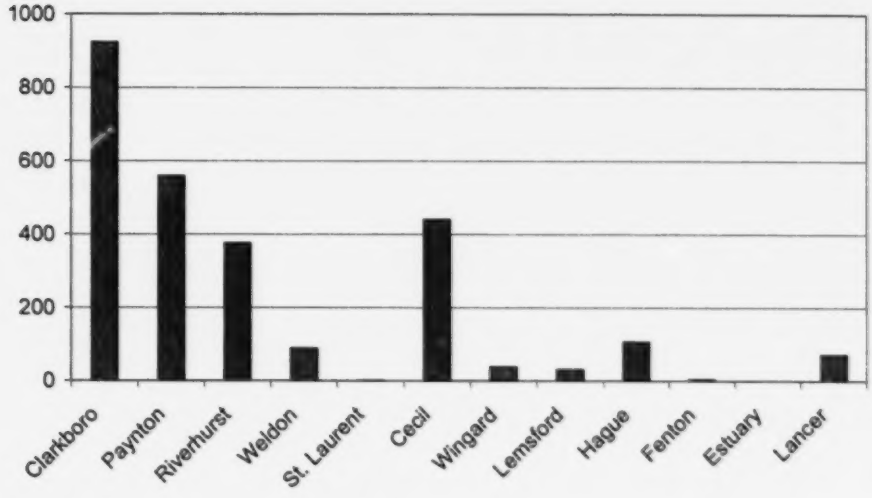
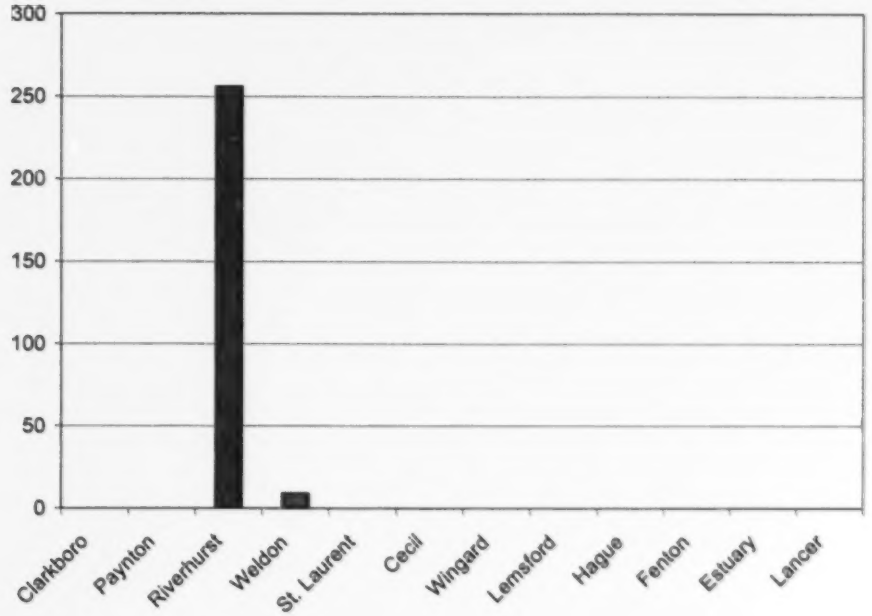
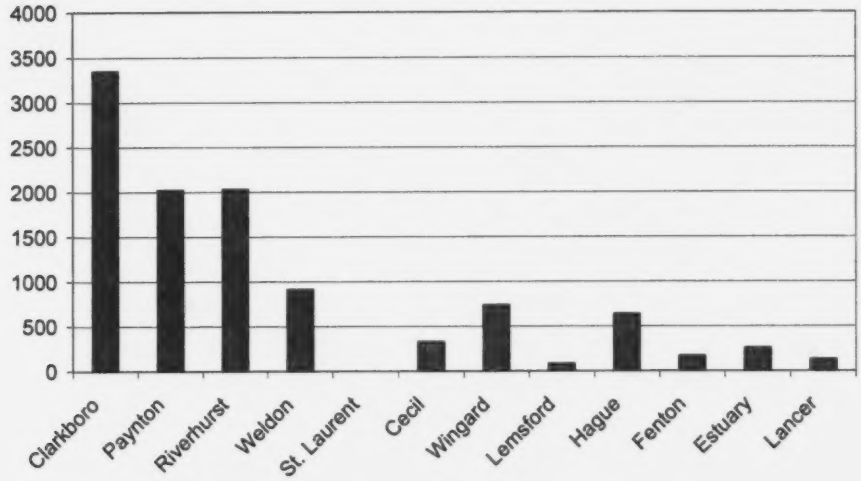


Chart 4.0C 2006 Multi Trailer Trucks by Location



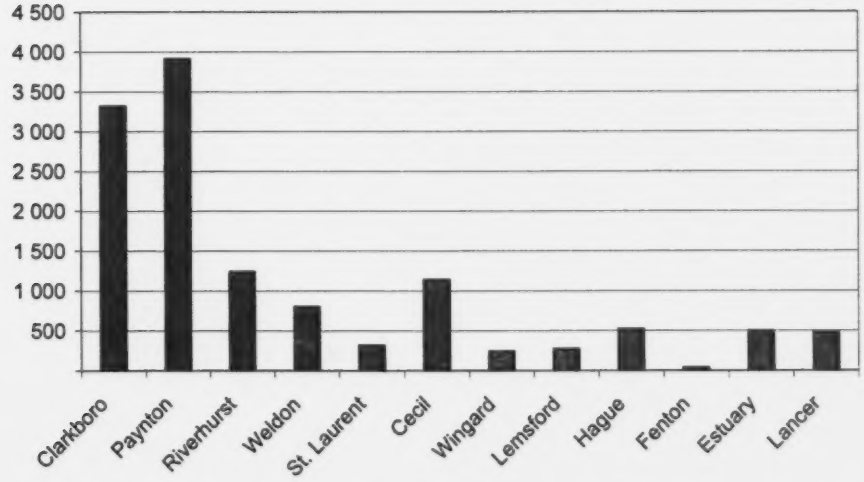
Most ferries are not long enough to accommodate multi trailer trucks.

Chart 4.0D 2006 Other Vehicles by Location



The vehicle category "other" normally refers to farm or construction equipment except near recreation areas, where they are often recreational vehicles or passenger vehicles pulling a boat or camping trailer.

Chart 4.0E 2006 Commercial Vehicles by Location

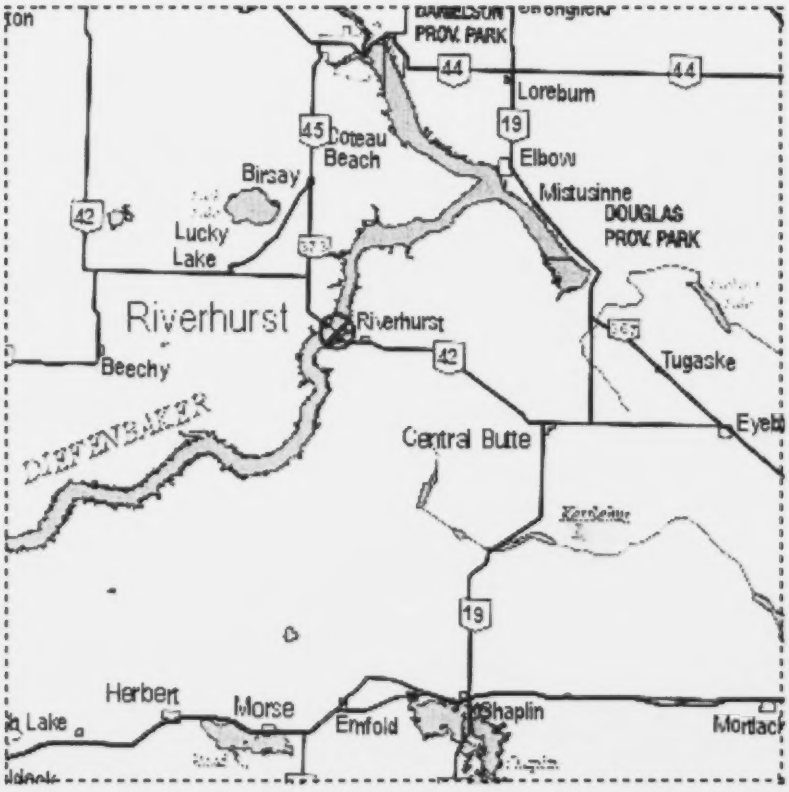


The commercial vehicles shown above only contain straight, single and multi trailer trucks. The "other" vehicles are not included because they are typically not hauling freight or commodities.

5.0 Site by Site Analysis

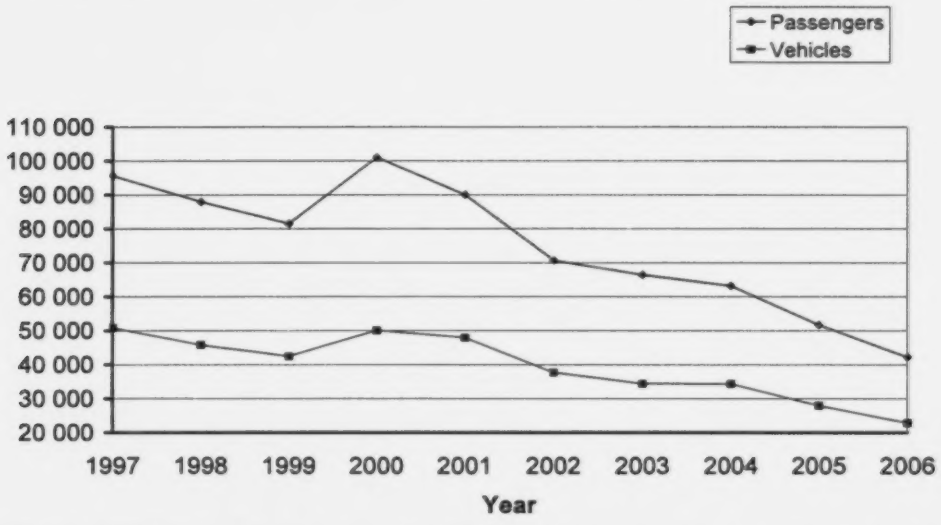
The ferry traffic data in this section are summarized by Department maintenance area. The area by area analysis results in six groupings: Moose Jaw, North Battleford, Prince Albert, Saskatoon, Swift Current and Wollaston.

5.1 Moose Jaw Area



The Moose Jaw area contains only the Riverhurst ferry, which is the largest and most sophisticated cable-stayed ferry in the province. This is the only ferry in the system located on a provincial highway. The Riverhurst ferry carries traffic on Highway 42 across the 2 km width of Lake Diefenbaker.

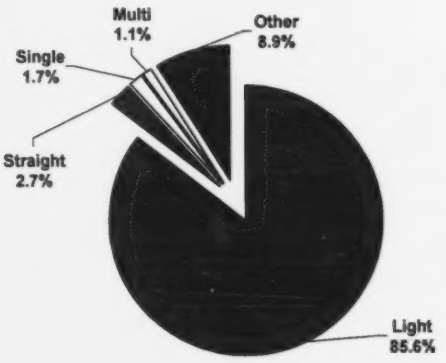
Chart 5.1A 10 Year History of Traffic on the Riverhurst Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	50 766	45 763	42 424	50 010	47 867	37 578	34 288	34 258	27 829	22 741	**39 352**
Passengers	95 671	87 956	81 526	100 979	90 056	70 700	66 422	63 193	51 692	42 213	**75 041**
ADT	213	190	174	216	204	176	169	153	127	144	**177**
Truck %		7.3	7.9	5.5	7.0	7.7	7.0	6.4	6.3	5	**6.7**

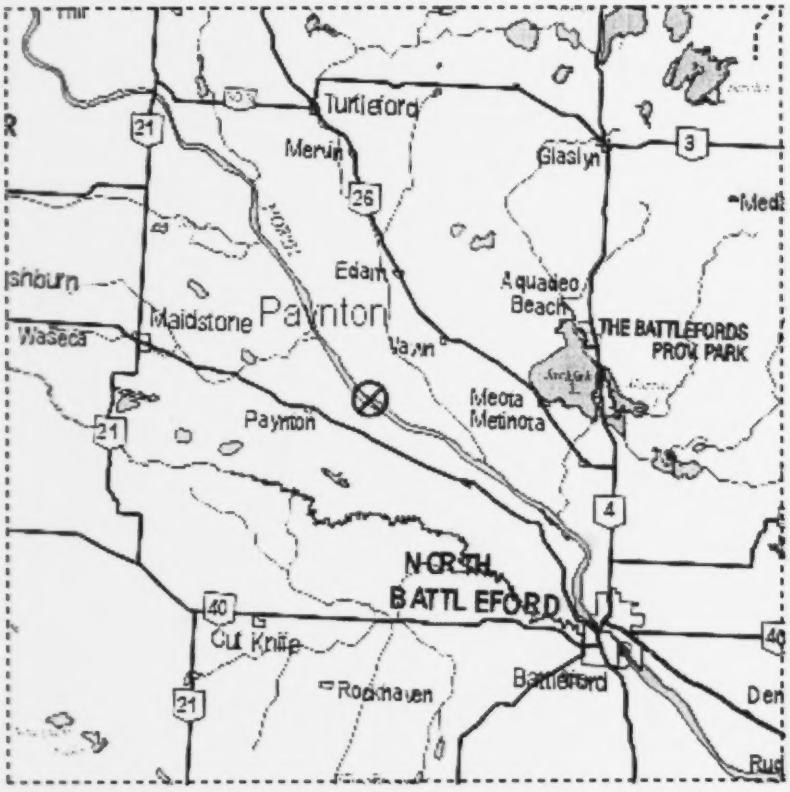
Traffic on the Riverhurst ferry decreased by 18% to the lowest volume in the last ten years. The 2006 ADT increased by 13% from 2005. The main reason for the traffic decrease was a series of mechanical breakdowns throughout the season. The longest breakdown period occurred between May 29 and June 15. The second longest period of downtime was at the beginning of the season, when the ferry operated for two days but did not start regular operations until five days afterward. There were five other periods in the season when downtime lasted between two and four days. The most common cause of those breakdown periods was a damaged shaft. The complete list of other downtime periods appears in Appendix B.

Chart 5.1B Vehicle Types Using the Riverhurst Ferry



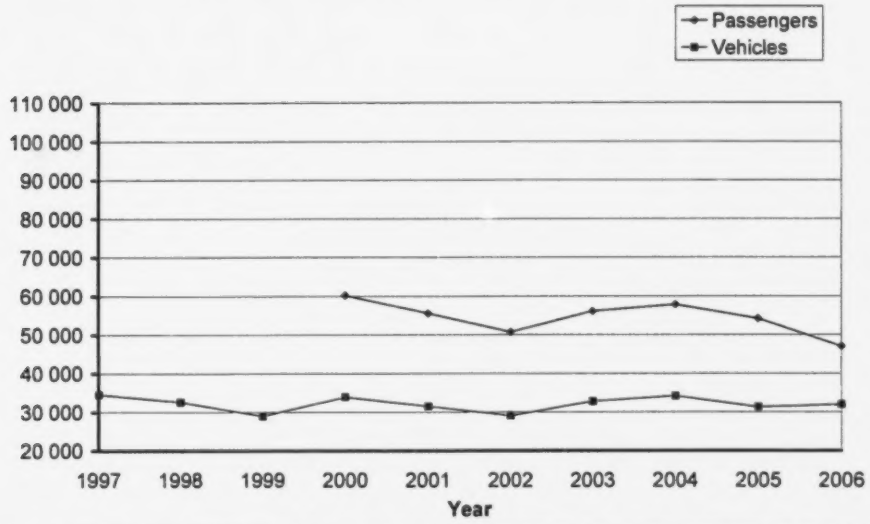
Riverhurst had the highest percentage of "other" vehicles. At Riverhurst, "other" category usually refers to passenger vehicles pulling campers or boats, and other recreational vehicles.

5.2 North Battleford Area



The North Battleford area has only the Paynton ferry.

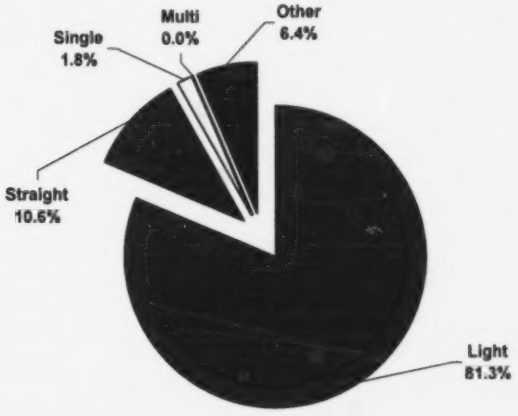
Chart 5.2A 10 Year History of Traffic on the Paynton Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	34 365	32 453	28 808	33 749	31 348	28 910	32 603	33 996	31 155	31 752	**31 914**
Passengers				60 119	55 475	50 577	56 014	57 743	54 100	46 889	**54 417**
ADT	210	159	141	170	158	167	175	180	161	169	**169**
Truck %		9.4	10.3	11.0	12.0	14.0	13.2	12.1	11.4	12	**11.8**

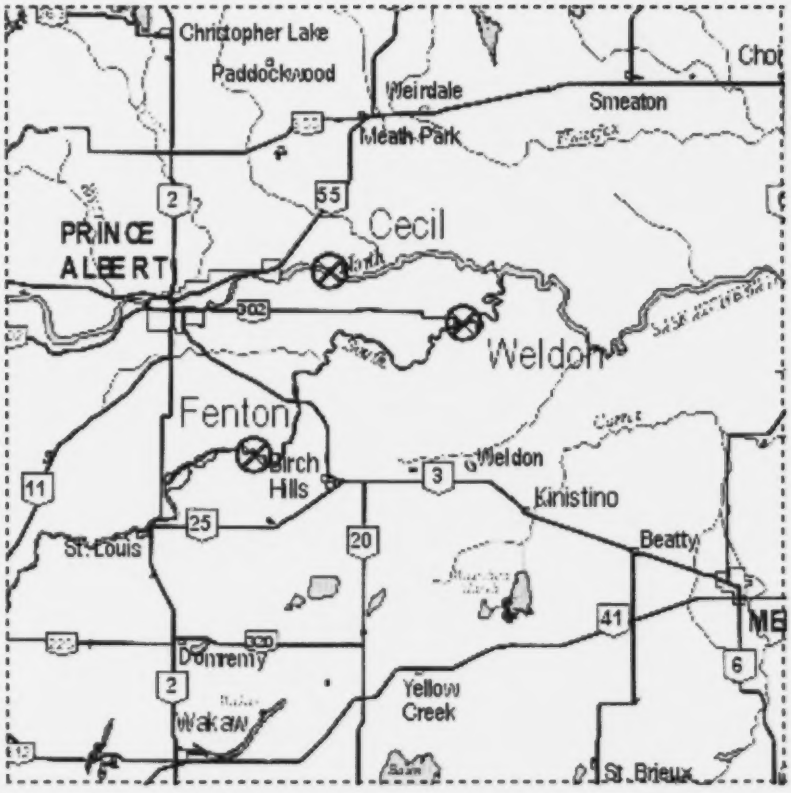
In 2006, traffic on the Paynton ferry increased by 2%. The ADT increased by 5% to match the ten year average.

Chart 5.2B Vehicle Types Using the Paynton Ferry



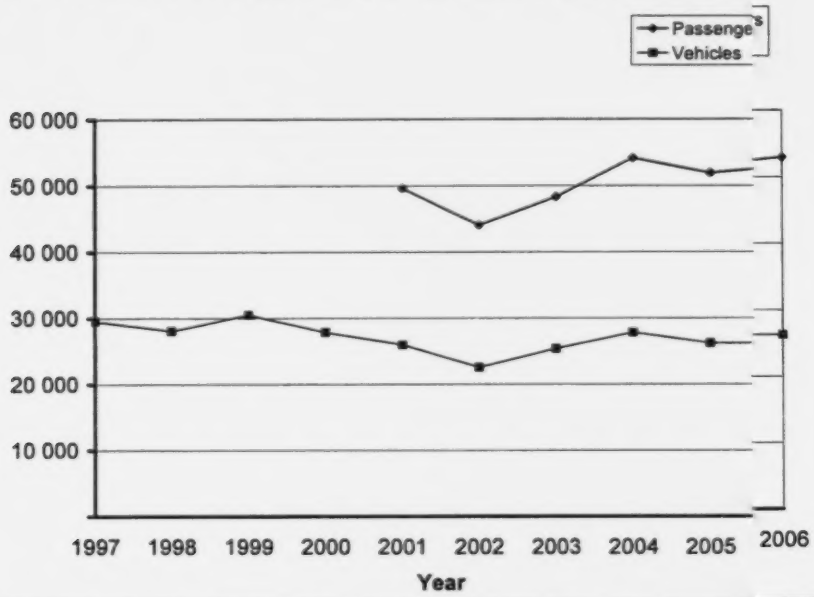
Paynton serves as a freight haul link to Highway 16, as demonstrated by the relatively high percentage of trucks that used the ferry in 2006. The percentage of trucks was the highest of all the cable-stayed ferries.

5.3 *Prince Albert Area*



The Prince Albert area includes the Weldon, Cecil and Fenton ferries.

Chart 5.3A 10 Year History of Traffic on the Weldon Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	29 455	28 003	30 382	27 770	25 875	22 461	25 308	27 709	26 124	26 137	**26 922**
Passengers					49 555	44 007	48 249	54 082	51 835	52 851	**50 097**
ADT	153	142	159	141	135	133	142	141	144	144	**143**
Truck %	7.8	4.8	5.1	4.5	5.2	3.8	5.9	3.8	3.4	3	**4.7**

In 2006, traffic on the Weldon ferry changed very little compared to 2005. The ADT also remained the same and was close to the ten year average.

Chart 5.3B Vehicle Types Using the Weldon Ferry

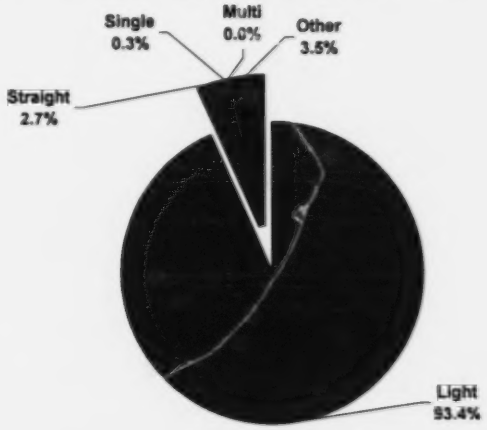
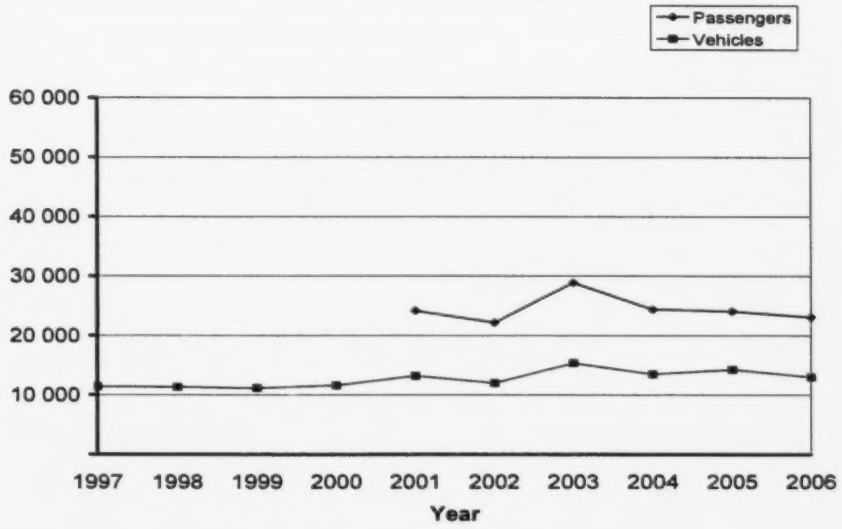


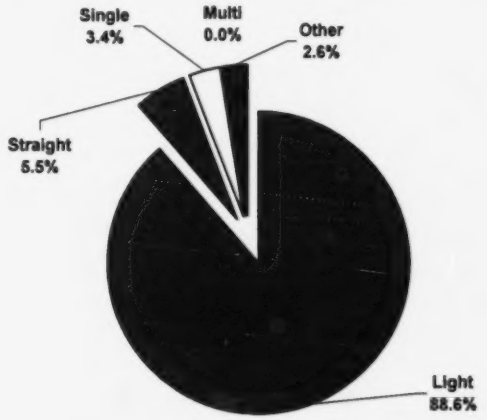
Chart 5.3C 10 Year History of Traffic on the Cecil Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	11 303	11 234	11 016	11 484	13 073	11 873	15 254	13 368	14 151	12 897	**12 565**
Passengers					24 098	22 112	28 819	24 310	24 015	23 052	**24 401**
ADT	59	57	58	57	67	71	86	69	74	69	**67**
Truck %	10.9	10.9	10.8	9.5	10.1	9.1	10.0	9.1	7.7	9	**9.7**

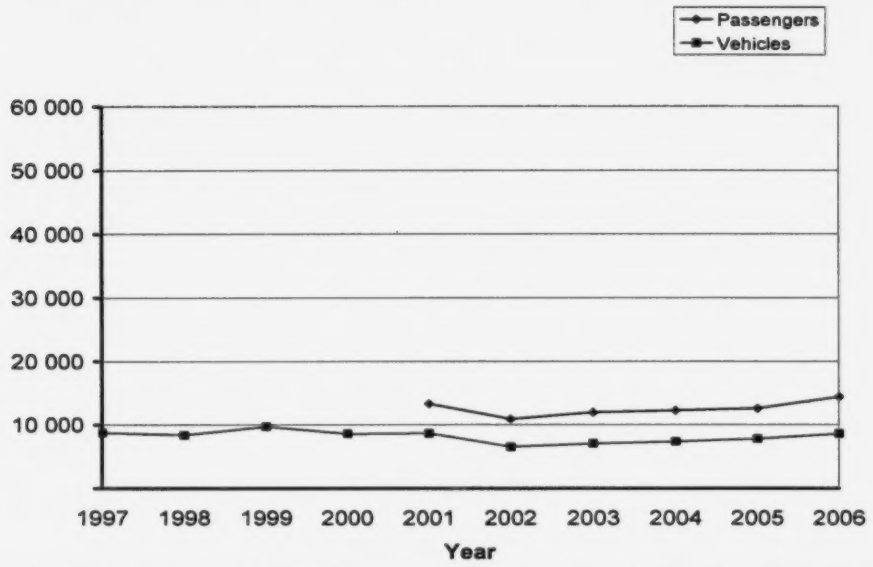
The 2006 Cecil ferry traffic decreased from 2005 by 9%. The ADT decreased by 7% from 2005.

Chart 5.3D Vehicle Types Using the Cecil Ferry



Cecil has consistently carried a large proportion of trucks. The high percentage of straight trucks at Cecil indicates that it is on a short distance haul route.

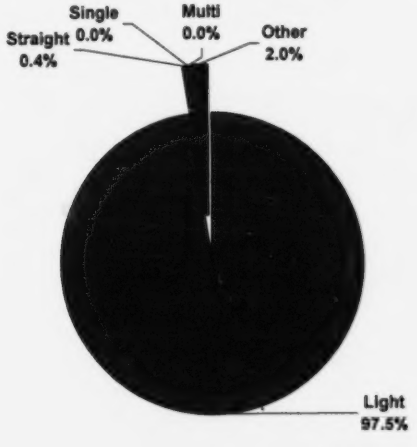
Chart 5.3E 10 Year History of Traffic on the Fenton Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	8 716	8 324	9 640	8 533	8 563	6 461	6 974	7 306	7 738	8 519	**8 077**
Passengers					13 236	10 835	11 909	12 209	12 517	14 341	**12 508**
ADT	45	43	51	45	45	40	41	38	43	47	**44**
Truck %	2.8	1.1	2.8	1.2	1.0	0.8	1.8	0.7	0.5	0.5	**1.3**

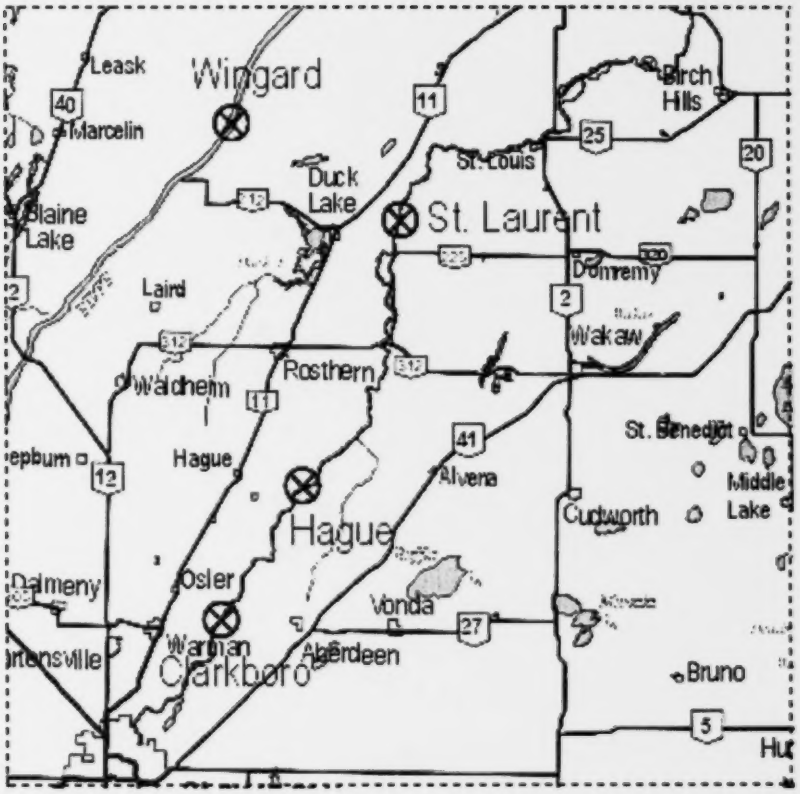
Traffic on the Fenton ferry increased 10% in 2006. The 2006 ADT increased by 9% over 2005 and was above the ten year average.

Chart 5.3F Vehicle Types Using the Fenton Ferry



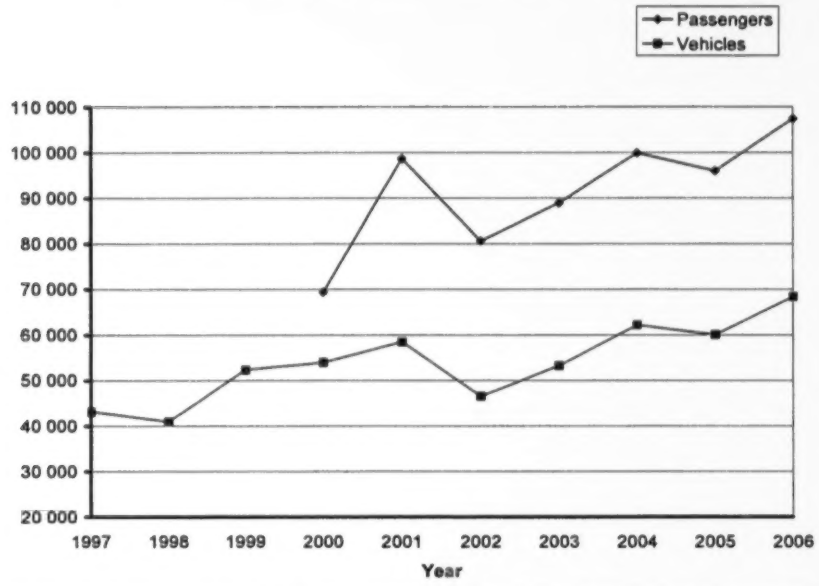
Traffic on the Fenton ferry was almost exclusively passenger vehicles.

5.4 Saskatoon Area



The Saskatoon area contains four ferries: Clarkboro, St. Laurent, Wingard and Hague.

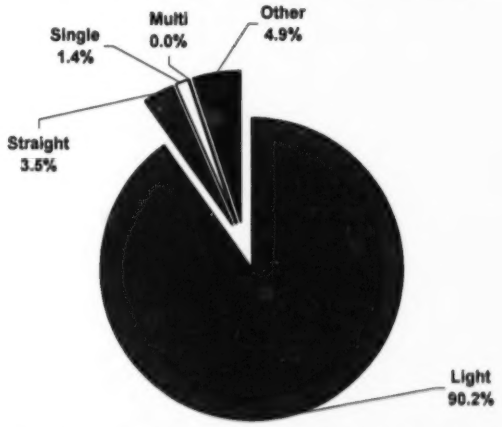
Chart 5.4A 10 Year History of Traffic on the Clarkboro Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	42 991	40 839	52 185	53 780	58 303	46 374	53 066	62 005	59 852	68 246	**53 764**
Passengers				69 292	98 654	80 526	88 909	99 892	95 977	107 442	**91 527**
ADT	218	206	234	255	255	234	276	278	298	327	**258**
Truck %		3.6	4.0	4.6	5.0	3.9	4.4	4.0	4.9	5	**4.4**

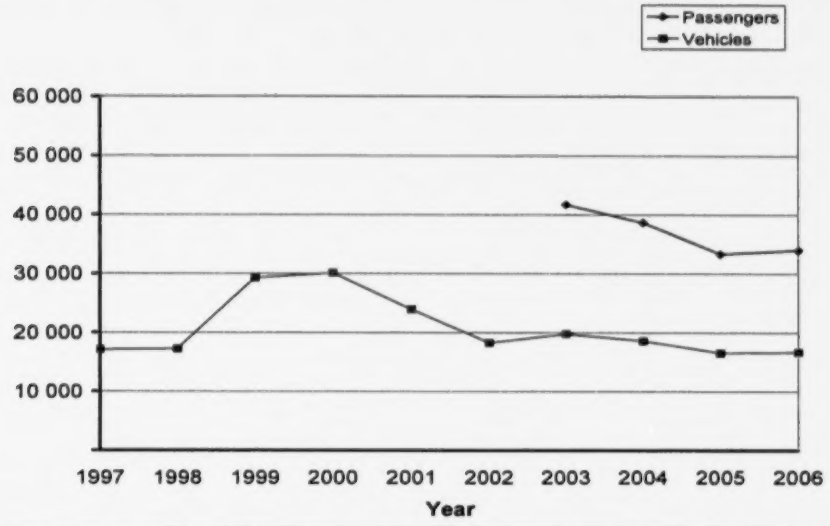
20006 traffic on the Clarkboro ferry increased by 14% from 2005 to the highest leveel in ten years. ADT increased by 10% in 2006, continuing the yearly incrreases that began in 2003.

Chart 5.4B Vehicle Types Using the Clarkboro Ferry



Thee Clarkboro ferry has the highest amount of traffic and the highest ADT amcong Saskatchewan's ferries.

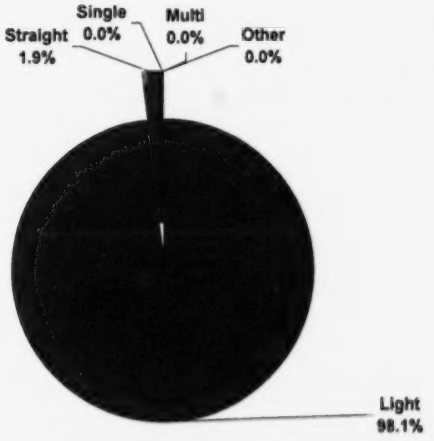
Chart 5.4C 10 Year History of Traffic on the St. Laurent Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	16 987	17 133	29 143	29 980	23 796	18 102	19 661	18 474	16 438	16 550	**20 626**
Passengers							41 656	38 612	33 252	33 897	**36 854**
ADT	91	85	130	147	111	99	107	88	84	86	**103**
Truck %	2.4	1.6	1.8	1.9	2.6	3.8	1.6	1.2	2.8	2	**2.2**

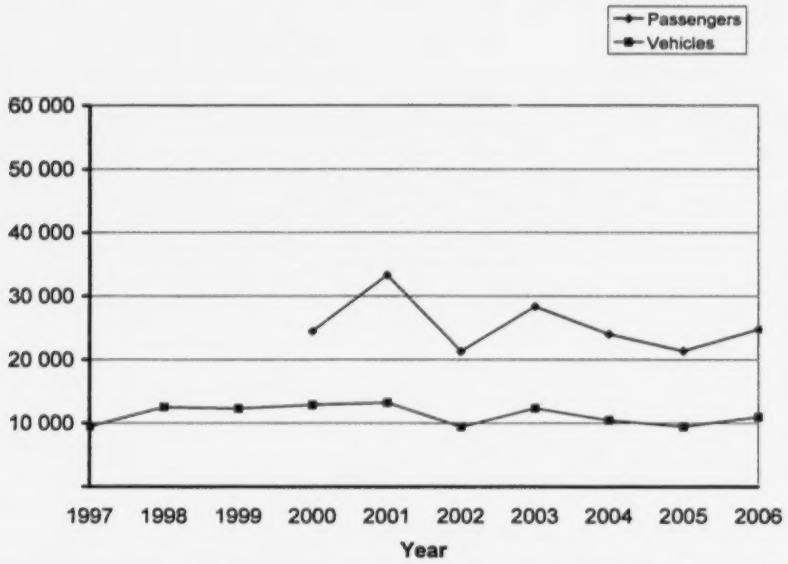
2006 traffic on the St. Laurent ferry increased slightly from 2005 traffic. The 2006 ADT increased 2% from 2005.

Chart 5.4D Vehicle Types Using the St. Laurent Ferry



The St. Laurent ferry carries predominantly passenger vehicles.

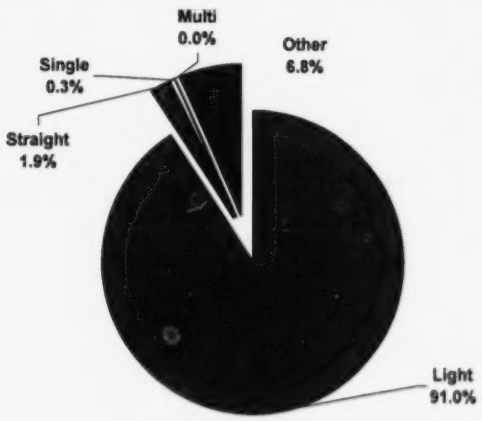
Chart 5.4E 10 Year History of Traffic on the Wingard Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	9 420	12 467	12 227	12 791	13 158	9 368	12 276	10 390	9 375	10 898	**11 237**
Passengers				24 417	33 260	21 271	28 299	23 954	21 305	24 725	**25 319**
ADT	50	63	63	63	66	54	66	54	49	57	**59**
Truck %	6.8	5.4	4.2	3.4	3.2	3.9	5.0	4.3	3.5	2	**4.2**

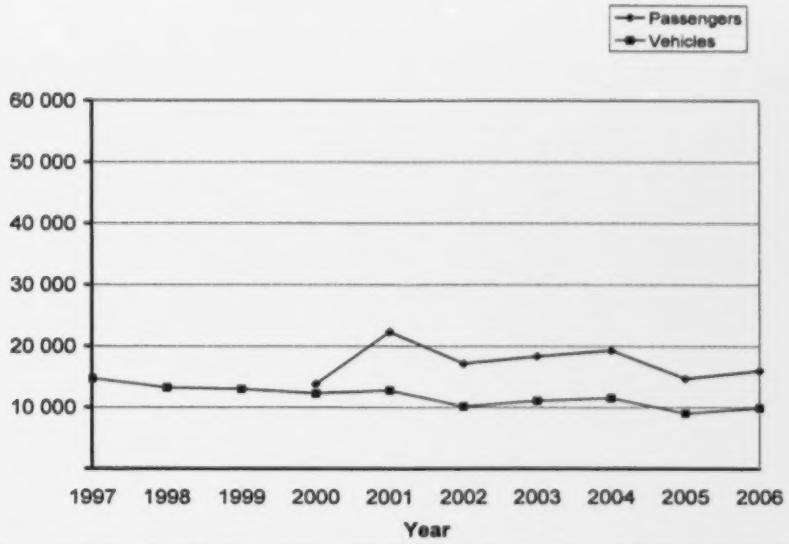
Traffic on the Wingard ferry increased by 16% from 2005. ADT also increased by 16% in 2006.

Chart 5.4F Vehicle Types Using the Wingard Ferry



Wingard ferry had a high percentage of "other" vehicles.

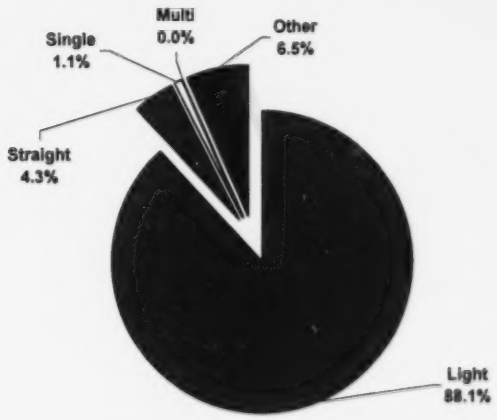
Chart 5.4G 10 Year History of Traffic on the Hague Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	14 577	13 122	12 845	12 156	12 652	10 006	10 963	11 368	8 906	9 772	**11 637**
Passengers				13 705	22 221	17 040	18 254	19 189	14 580	15 885	**17 268**
ADT	75	68	58	61	59	55	59	54	51	50	**59**
Truck %		12.5	6.4	6.4	4.6	4.8	6.4	5.1	6.4	5	**6.4**

Traffic on the Hague ferry increased by 10% over 2005, but was still below the ten year average. The 2006 ADT decreased by 2% to the lowest value in ten years.

Chart 5.4H Vehicle Types Using the Hague Ferry

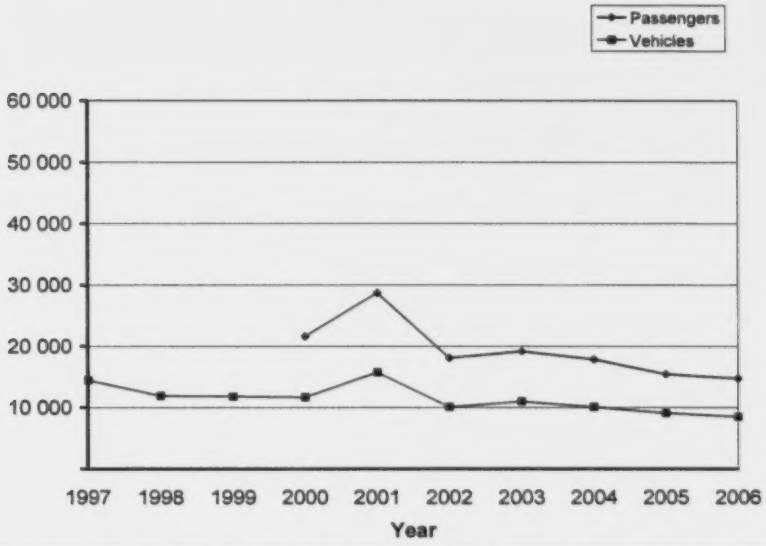


The Hague ferry had a high percentage of "other" vehicles.

5.5 Swift Current Area

The Swift Current area has three ferries: Lemsford, Estuary and Lancer.

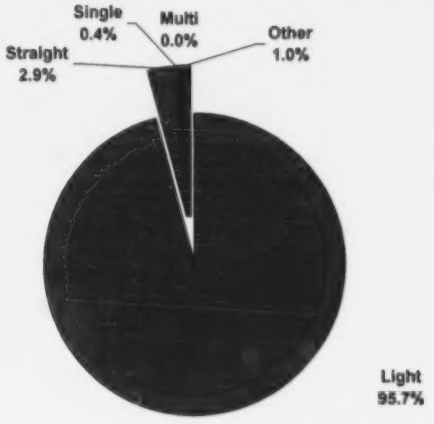
Chart 5.5A 10 Year History of Traffic on the Lemsford Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	14 393	11 849	11 730	11 623	15 659	10 031	10 885	10 040	9 042	8 418	**11 367**
Passengers				21 548	28 651	18 050	19 129	17 797	15 406	14 708	**19 327**
ADT	68	58	52	58	69	55	59	48	48	44	**56**
Truck %		4.0	3.9	3.6	2.5	5.2	5.8	5.1	3.4	3	**4.1**

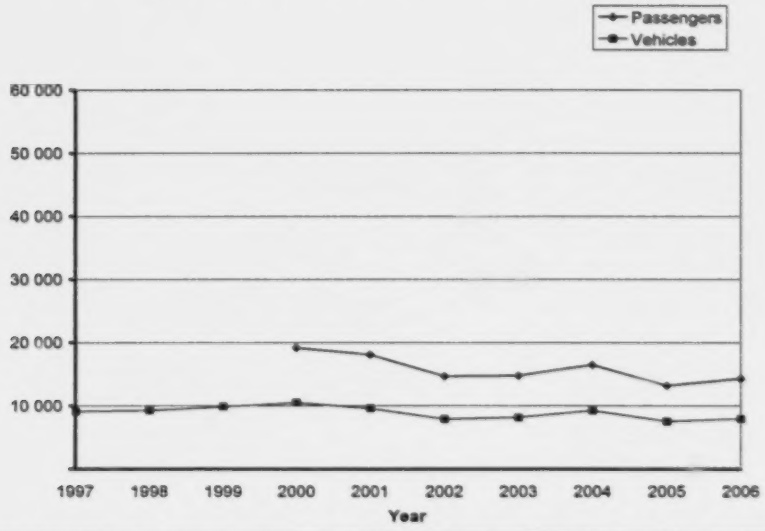
Traffic volume on the Lemsford ferry decreased by 7% from 2005 and was the lowest volume in the last 10 years. The 2006 ADT decreased 8% from the 2005 ADT to the lowest level ten years.

Chart 5.5B Vehicle Types Using the Lemsford Ferry



The vast majority of traffic on the Lemsford ferry was passenger vehicles.

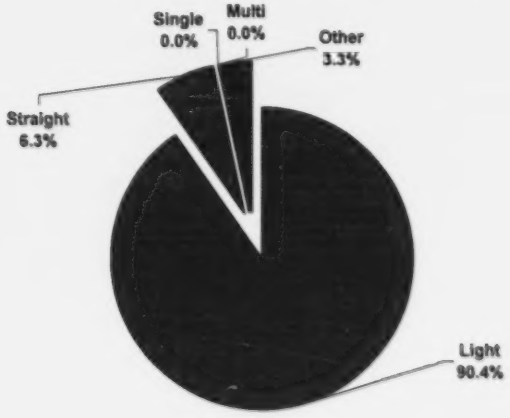
Chart 5.5C 10 Year History of Traffic on the Estuary Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	9 058	9 217	9 793	10 437	9 541	7 847	8 096	9 200	7 496	7 888	**8 857**
Passengers				19 152	18 045	14 631	14 728	16 435	13 156	14 266	**15 773**
ADT	44	47	44	52	48	48	49	46	44	43	**47**
Truck %		5.1	9.3	5.4	4.7	8.9	6.1	7.5	6.3	6	**6.6**

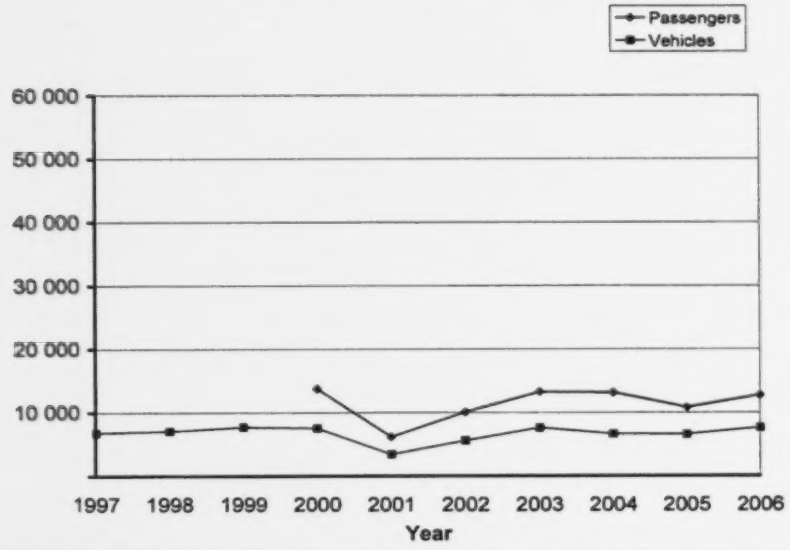
Traffic on the Estuary ferry increased 5% in 2006. The 2006 ADT was similar to the 2005 ADT.

Chart 5.5D Vehicle Types Using the Estuary Ferry



The percentage of trucks using the Estuary ferry has continued to decrease from the high of 8.9% in 2002. This ferry also carried the second highest percentage of straight trucks, next to the Paynton ferry.

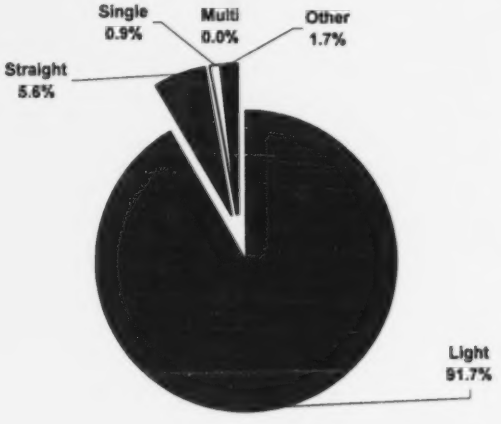
Chart 5.5E 10 Year History of Traffic on the Lancer Ferry



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Vehicles	6 685	6 967	7 604	7 421	3 324	5 503	7 490	6 498	6 461	7 490	**6 544**
Passengers				13 668	6 113	9 992	13 174	13 090	10 694	12 662	**11 342**
ADT	33	33	34	37	34	32	40	31	37	39	**35**
Truck %		2.4	4.0	3.7	2.3	3.9	6.7	6.4	4.8	7	**4.5**

In 2006, the traffic on the Lancer ferry increased 16%. The 2006 ADT increased by 5% from 2005.

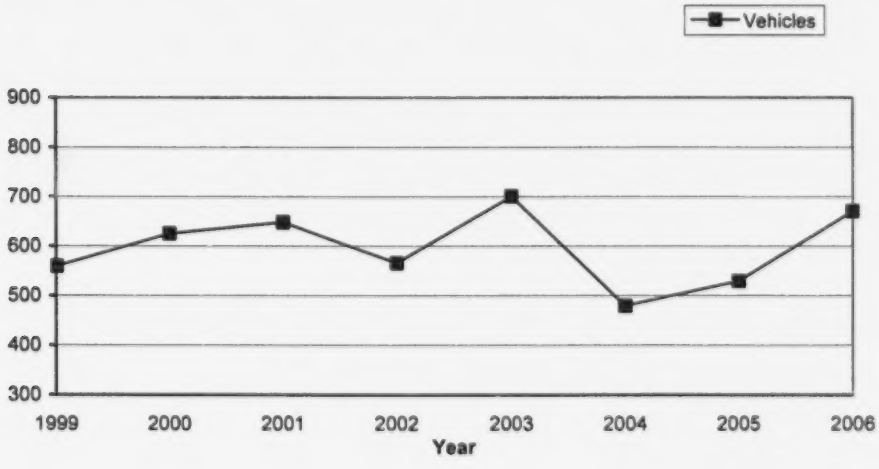
Chart 5.5F Vehicle Types Using the Lancer Ferry



5.6 Wollaston Barge Ferry

The Wollaston Barge ferry connects the community of Wollaston Lake to Highway 905. This vessel is unique because it is the only free-swimming ferry operated in the province and is the only ferry that charges a fee. The Hatchet Lake Denesuline First Nation operates the ferry under contract to the Department. The operational season at Wollaston Lake was shorter than other ferries in the province due to the northern location. This ferry carries significantly lower traffic volumes than the southern ferries because the length of the crossing allows a maximum of only three round trips each day.

Chart 5.6A Eight Year History of Traffic on the Wollaston Barge Ferry

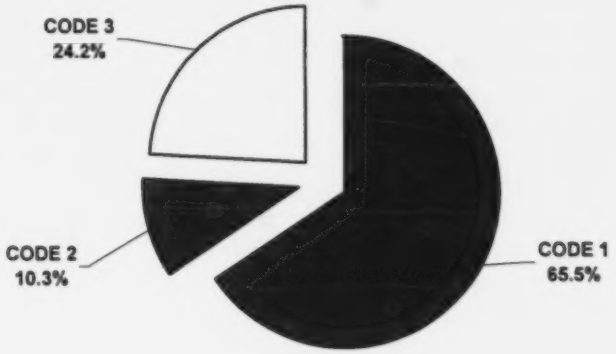


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Vehicles			559	625	648	565	700	479	529	670
ADT			5	5	6	5	5	5	5	5
Truck %			38.3	42.7	41.5	45.0	42.6	38.8	34.0	34.5

In 2006, traffic on the Wollaston Barge ferry increased by 26%. The 2006 ADT was similar to the 2005 ADT and the eight year average.

The vehicle classification system used at Wollaston is different than that used by the rest of the ferry system. The three codes used at the Wollaston Barge ferry are based on the fee structure charged to the different vehicle types.

Chart 5.6B Vehicle Types Using the Wollaston Barge Ferry



Code 1 - Single Light Vehicle - car, truck (less then a 1 ton), motorcycle, etc.

Code 2 - Other - includes single vehicles with trailer, trucks over one ton, etc.

Code 3 - Full - Any semi trailer, construction equipment, etc.

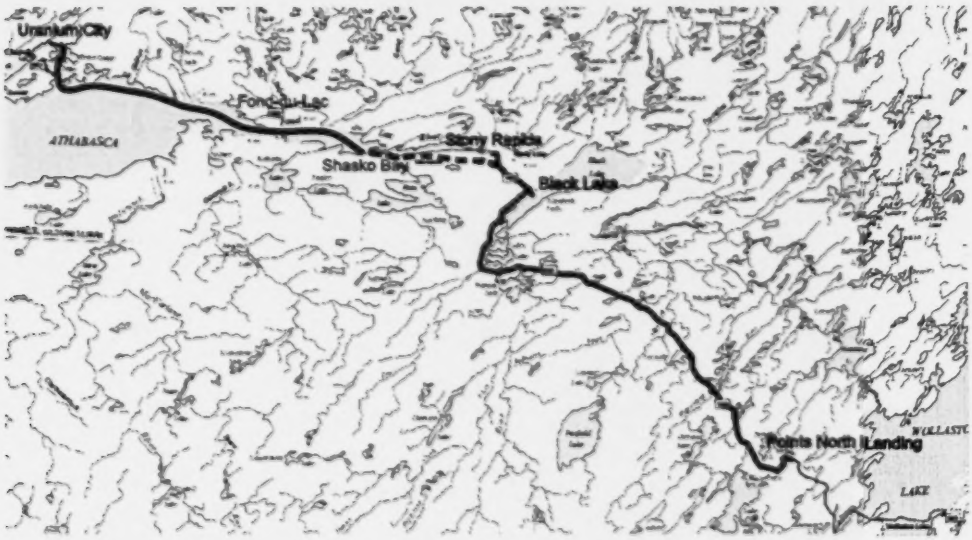
The Wollaston ferry carried the highest percentage of commercial vehicles in the province at approximately 34.5%. Other than by air, this ferry provides the only summer access to Wollaston Lake. There are few passenger trips because the community is small and the trip to the nearest community is quite long.

6.0 Seasonal/Winter Roads

Three of the four seasonal/winter roads were operated by the Department in 2006: the Cumberland House road (52 km), the Wollaston Lake road (46 km) and the Athabasca road (358 km). The Riverhurst ice road (2.4 km) did not operate. The seasonal/winter roads are a vital link to the northern communities. They provide economical access to heavy and bulk commodities like fuel and building materials.

The length of the operating season for the seasonal/winter roads varies from year to year depending on winter conditions. Local traffic often uses the roads outside of the official season. The ice has to be sufficiently thick and the road completely constructed before the Department officially allows travel on a seasonal/winter road.

6.1 Athabasca Seasonal/Winter Road



The Athabasca seasonal/winter road was maintained by the Athabasca Basin Development Corporation under contract to the Department. Four separate road sections form the Athabasca seasonal/winter road. Over 185 km from Points North Landing to Black Lake is currently a bladed trail that requires extensive yearly repair work. The road from Stony Rapids to Shasko Bay was a winter-only road and the two sections from Shasko Bay to Uranium City are ice roads across Lake Athabasca.

The combined length of the seasonal/winter road sections from Points North to Uranium City was 358 km. The 2005-06 cost of building and maintaining the four seasonal/winter road sections was $1,106,136 for a unit cost of $3,090 per km. An estimated 3,200 vehicles used the road in 2006. Historical data for the sections are shown in the following tables.

Table VI. History of the Athabasca Seasonal/Winter Road (Points North to Black Lake)

Year	Opening	Closing	Length (days)	Length (km)	Cost
1999-2000	Nov 1	Mar 31	152	180	$648,433
2000-01	Dec 6	Mar 31	116	180	$465,944
2001-02	Dec 6	Apr 12	128	180	$616,347
2002-03	N/A	N/A		180	$866,523
2003-04	N/A	Mar 31		183	$1,182,483
2004-05	N/A	Apr 4		183	$1,106,954
2005-06	N/A	N/A		183	$835,103

* There were no official opening or closing dates in 2003 or 2006

Table VII History of the Athabasca Seasonal/Winter Road (Stony Rapids to Shasko Bay)

Year	Opening	Closing	Length (days)	Length (km)	Cost
1999-2000	Feb 1	Mar 31	60	51	$145,019
2000-01	Dec 6	Mar 31	116	51	$370,361
2001-02	Feb 26	Apr 5	39	51	$95,459
2002-03	Feb 10	Mar 31	50	51	$106,195
2003-04	Feb 11	Mar 31	50	50	$62,185
2004-05	Feb 10	Apr 4	54	50	$96,918
2005-06	Mar 2	Mar 31	29	50	$86,100

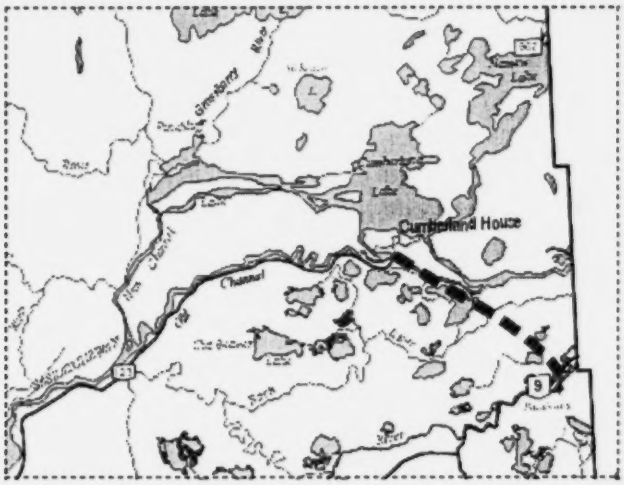
Table VIII. History of the Athabasca Seasonal/Winter Road (Shasko Bay to Fond du Lac)

Year	Opening	Closing	Length (days)	Length (km)	Cost
1999-2000	N/A	Mar 31		32	$98,544
2000-01	Feb 8	Mar 31	52	32	$113,305
2001-02	Feb 26	Apr 5	39	32	$118,713
2002-03	Feb 10	Mar 31	50	32.6	$108,851
2003-04	Feb 11	Mar 31	50	32	$110,070
2004-05	Feb 10	Apr 4	54	32	$98,000
2005-06	Mar 2	Mar 31	29	32	$90,000

Table IX. History of the Athabasca Seasonal/Winter Road (Fond du Lac to Uranium City)

Year	Opening	Closing	Length (days)	Length (km)	Cost
1999-2000	Mar 1	Mar 31	31	100	$15,318
2000-01	Feb 26	Mar 6	9	85	$39,359
2001-02	Mar 6	Mar 22	17	92	$37,572
2002-03	Feb 17	Mar 15	27	92	$99,208
2003-04	Mar 1	Mar 18	18	93	$60,000
2004-05	Mar 8	Apr 6	30	93	$104,292
2005-06	Mar 17	Mar 31	14	93	$94,932

6.2 Cumberland House Winter Road



The Cumberland House winter road was first operated in 1992-1993. The Cumberland House road was 53 km long and intersects with the north end of Highway 9 just west of the Manitoba boundary. The first 17 km were significantly improved in 2004-05. The roadway was widened and sight distances were improved. These first 17 kms were maintained by Weyerhaeuser.

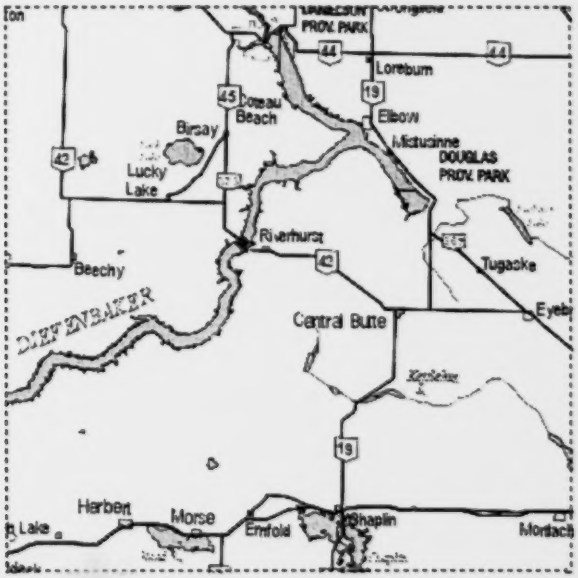
The winter road was open to traffic for 45 days in 2005-06. An estimated 30 vehicles per day used the road, for a total of 1350 vehicles during the operating season. Total Department expenditures for the Cumberland House road in the 2005-06 fiscal year were $12,252 for a unit cost of $231 per km or $272 per day of operation. Included in this cost was a realignment of a 1 km section that had slipped into the Saskatchewan River in the summer of 2005. The 10 year history of the Cumberland House winter road is shown in the table below.

Table X. 10 Year History of the Cumberland Winter Road

Year	Opening	Closing	Length (days)	Cost
1996-97	Jan 5	Mar 26	81	$19,702
1997-98	Jan 19	Mar 24	65	$3,610
1998-99	Dec 8	Mar 3	86	$4,524
1999-2000	Jan 5	Mar 22	78	$4,500
2000-01	Jan 3	Mar 14	71	$14,242
2001-02	Jan 11	Mar 28	77	$13,113
2002-03	Jan 22	Mar 21	59	$18,952
2003-04	Jan 30	Apr 2	64	$22,424
2004-05	Dec 30	Mar 31	92	$46,575*
2005-06	Feb 9	Mar 24	45	$12,252

* Widening and Sight Distance Improvements

6.3 *Riverhurst Winter Road*



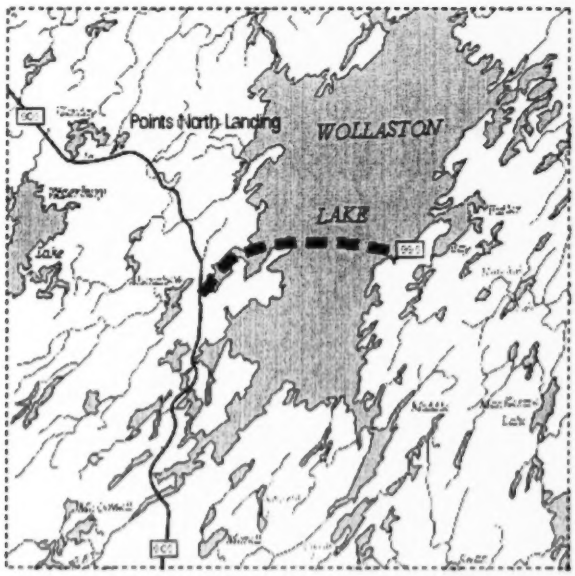
The Riverhurst ice road has operated intermittently for many years. In years when an official road is opened, the Department establishes and maintains it. The Department decided not to open the 2.4 km ice road for the 2005-06 season because the ice did not become sufficiently thick early in the season. During non-official years, local residents may create their own winter trail across the ice in the years that the Department opts not to open a winter road. There is no official operational record for those years.

The winter road was closed to traffic for the 2005-06 season. No expenditures were made for the Riverhurst road in the 2005-06 fiscal year. The 10 year history of the Riverhurst winter road is shown in the table below.

Table XI. 10 Year History of the Riverhurst Ice Road

Year	Opening	Closing	Length(days)	Cost
1996-97	Jan 20	Mar 20	60	N/A
1997-98	N/A	N/A		N/A
1998-99	Feb 1	Mar 19	47	N/A
1999-2000	N/A	N/A		N/A
2000-01	Mar 4	Mar 12	9	N/A
2001-02	N/A	N/A		N/A
2002-03	Feb 21	Mar 15	23	$16,547
2003-04	Feb 4	Mar 10	36	$60,782
2004-05	Feb 4	Mar 6	31	$21,000
2005-06	N/A	N/A		N/A

6.4 *Wollaston Lake Winter Road*



The Wollaston Lake ice road was 46 km long and crosses the ice on Wollaston Lake to provide access to the residents of the community of Wollaston Lake. The road was established and maintained by the Hatchet Lake Denesuline First Nation under contract to the Department. The total cost was $124,246 for a unit cost of $2,701 per km and $3,270 per day. An estimated 200 vehicles per week used the roadway, for a total of 1,100 vehicles during the operating season. The operational history of the Wollaston Lake ice road is shown in the table below.

Table XII. History of the Wollaston Lake Ice Road

Year	Opening	Closing	Length(days)	Cost
1997-98	Jan 11	Mar 31	80	$128,000
1998-99	Feb 15	Mar 31	45	$129,000
1999-00	Jan 17	Mar 31	75	$126,666
2000-01	Feb 20	Apr 8	46	$95,844
2001-02	Feb 12	Apr 5	53	$99,158
2002-03	Feb 10	Apr 5	55	$124,813
2003-04	Feb 18	Mar 31	43	$100,079
2004-05	Feb 9	Apr 6	57	$97,000
2005-06	Feb 21	Mar 31	38	$124,246

7.0 Conclusions

Year over year traffic fluctuations at individual ferries are related to the operating season length, river conditions and local economic activity. In 2006, the ferry system operated below the ten year average traffic levels. Some ferries were closed for a small number of days in June because of high water levels. Riverhurst ferry had multiple breakdowns and subsequent closures through the season. Overall, the 2006 ADT was 3% higher than the 2005 ADT. The number of passengers traveling the ferries was approximately 1.1% higher than in 2005.

7.1 Operating Season/Downtime

- The 2006 operating season length was slightly shorter than the 2005 season.
- As in previous years, the Riverhurst ferry had the longest operating season, extending into December. However, the Clarkboro ferry operated for the most hours in 2006.
- Riverhurst was the only cable-stayed ferry that was shutdown for long periods in 2006 because of recurring mechanical problems.
- Other cable-stayed ferries in Lemsford, Estuary, and Lancer, were shutdown at some point in June because of high water levels.
- The shutdown periods ranged from a low of 0% of the operating season at eight of the ferries to a high of 29.8% at Riverhurst.
- The operating periods for the seasonal/winter roads were shorter than in 2005, resulting in a reduction in operating costs of about $300,000.

7.2 Traffic Volumes

- Riverhurst was the only ferry that carried more than 10% fewer vehicles in 2006 than in 2005.
- Fenton, Clarkboro, Wingard, Lancer, and Hauge carried over 10% more vehicles in 2006 than in 2005.
- The ADT at Lemsford and Cecil ferries dropped by 9% and 7% respectively compared with the 2005 ADT.
- The ADT at Riverhurst, Clarkboro, Wingard increased by over 10% and at Fenton, Lancer, and Paynton by over 5% compared with the 2005 ADT.

7.3 Vehicle Classifications

- The Wingard, Riverhurst, Paynton and Hague ferries had a high percentage of "other" vehicles, which are normally interpreted as farming and recreational vehicles.
- The Paynton, Estuary, Lancer, Hague and Cecil ferries had a large percentage of straight trucks, which are used primarily for short distance hauling.
- Riverhurst, Cecil, and Paynton ferries had the highest percentage of single and multi trailer semi trucks.
- The Wollaston Barge ferry had the highest percentage of trucks.
- Only the Cecil and Paynton ferries had increased truck percentages in 2006 compared with 2005.

8.0 Recommendation

The Department requires the operators of the Wollaston Barge ferry to collect passenger volumes and implement the vehicle type classification system used at the rest of the ferries. The Traffic Engineers are prepared to assist the Wollaston Barge operators to change their vehicle classification system. The assistance could include a visit to the ferry if required.

Saskatchewan Highways and Transportation

Daily Ferry Traffic

Ferry crossing _____ DATE _____

Crossing time	LGT	Straight Trucks	Semi Trailer	Multi Trailer	No. Pass	Other	Comments
Totals							

Statement Certified Correct

_____

Ferry operator

KEY

LGT	-Cars & Pickups
Straight Trucks	-Non-articulated
Semi Trailer	-Single Trailer
Multi-Trailer	-2 or more Trailers

Notes:

1) "Other" includes farm or construction equipment etc.
2) Give details in "Comments" ie: dangerous goods, equipment type, product hauled etc.

Saskatchewan Highways and Transportation

Ferry Traffic Data Summary

Ferry crossing_____ File No._____ Month of_____, 200___

Shift						
Day	LGT	Straight Trucks	Semi Trailer	Multi Trailer	No. Pass	Other
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Totals						

Statement Certified Correct

_____

Ferry operator

KEY

LGT	-Cars & Pickups
Straight Trucks	-Non-articulated
Semi Trailer	-Single Trailer
Multi-Trailer	-2 or more Trailers

Notes:

1) "Other" includes farm or construction equipment
2) Give details in "Comments" ie: dangerous goods equipment type, product hauled etc.

Riverhurst Ferry Traffic Data

Sheet No. _____

Date_____ Shift_____ Operators 1. _____ 2. _____

Departure Time	LGT	Straight Trucks	Semi Trailer	Multi Trailer	Other	Pass-engers	Comments	Engine R.P.M.	Weather			
									Wind(Kmh)	Sky	Surface	Temp
Totals												

Statement Certified Correct

_____

Ferry operator

Regular crew Name (please print)	Casual crew called Name	Accept	Refuse

		Main Engine	Genset 1	Genset 2
Hourmeter	Start			
	Finish			
Engine oil pressure				
Engine Coolant temp.				
Torque Converter Temp.				
Torque Converter Pres.				
Engine oil added				
Engine Coolant added				
Torque Conv. oil added				
Transmission oil added				
Final drive oil added				
Hydraulic oil	East Ramp_____		West Ramp_____	

Remarks (Weather, Servicing, etc)

2006 Ferry Downtime

Ferry	Date	Hours	2006 Total Downtime	% of Time Out of Service	Reason
Riverhurst	April 29 to May 4	144			Had Not Started Regular Operations
	May 10 to 11	7			Cable/Drum Repair
	May 24 to 25	12			Cable/Drum Repair
	May 29 to June 15	432			Mechanical Breakdown
	June 20	3			Repairs
	July 12 to 13	33			Computer Breakdown
	July 19 to 20	10			Repairs
	July 30 to August 2	96			Mechanical Breakdown (Shaft)
	August 25 to 28	72			Mechanical Breakdown
	September 15 to 18	85			Mechanical Breakdown (Brakes)
	October 10 to 12	72			Mechanical Breakdown
	October 16	3			Wind
	October 20	9			Mechanical Breakdown (Cable/Drum)
	October 24 to 26	59			Mechanical Breakdown (Shaft)
	November 7	24			No Reason Given
	November 14	12			Wind
	November 22	14			Wind
	December 1	24	1111	29.8	Wind
Lemsford	June 19 to 21	51	51	1.5	High Water
Estuary	June 17 to 25	154	154	4.6	High Water
Lancer	June 19 to 25	95	95	3.6	High Water

Historic Traffic Volumes

Ferry	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Clarkboro	34 291	37 284	34 674	42 448	31 975	39 338	42 991	40 839	52 185	53 780	58 303	46 374	53 066	62 005	59 852	68 246	**47 353**
Paynton	28 662	34 293	42 058	30 686	30 453	30 172	34 365	32 453	28 808	33 749	31 348	28 910	32 603	33 996	31 155	31 752	**32 216**
Riverhurst	32 613	38 835	40 242	40 076	41 291	36 449	50 766	45 763	42 424	50 010	47 867	37 578	34 288	34 258	27 829	22 741	**38 939**
Weldon	27 586	28 460	24 754	30 465	26 268	29 657	29 455	28 003	30 382	27 770	25 875	22 461	25 308	27 709	26 124	26 137	**27 276**
St.Laurent	25 842	24 017	18 556	20 421	30 030	19 875	16 987	17 133	29 143	29 980	23 796	18 102	19 661	18 474	16 438	16 550	**21 563**
Cecil	12 054	13 887	13 210	12 752	12 678	11 603	11 303	11 234	11 016	11 484	13 073	11 873	15 254	13 368	14 151	12 897	**12 615**
Wingard	9 511	10 628	10 115	10 719	10 687	9 878	9 420	12 467	12 227	12 791	13 158	9 368	12 276	10 390	9 375	10 898	**10 869**
Lemsford	13 368	13 588	13 381	13 471	12 170	12 805	14 393	11 849	11 730	11 623	15 659	10 031	10 885	10 040	9 042	8 418	**12 028**
Hague	13 258	15 700	20 883	14 442	12 425	11 961	14 577	13 122	12 845	12 156	12 652	10 006	10 963	11 368	8 906	9 772	**12 815**
Fenton	3 079	7 394	6 517	9 730	8 582	8 366	8 716	8 324	9 640	8 533	8 563	6 461	6 974	7 306	7 738	8 519	**7 778**
Estuary	7 172	7 900	8 153	7 278	6 844	8 463	9 058	9 217	9 793	10 437	9 541	7 847	8 096	9 200	7 496	7 888	**8 399**
Lancer	5 779	6 928	7 047	7 649	5 673	6 789	6 685	6 967	7 604	7 421	3 324	5 503	7 490	6 498	6 461	7 490	**6 582**
Wollaston Barge									559	625	648	565	700	479	529	670	**597**
Cumberland	20 891	23 192	24 000	23 041	28 198	19 082	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	**23 067**
Total	**234 106**	**262 106**	**263 590**	**263 178**	**257 274**	**244 438**	**248 716**	**237 371**	**258 356**	**270 359**	**263 807**	**215 079**	**237 564**	**245 091**	**225 096**	**231 978**	**247 382**

Historic Average Daily Traffic (ADT)

Ferry	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
Clarkboro	218	206	234	255	255	234	276	278	298	327	**258**
Paynton	210	159	141	170	158	167	175	180	161	169	**169**
Riverhurst	213	190	174	216	204	176	169	153	127	131	**175**
Weldon	153	142	159	141	135	133	142	141	144	144	**143**
St.Laurent	91	85	130	147	111	99	107	88	84	86	**103**
Cecil	59	57	58	57	67	71	86	69	74	69	**67**
Wingard	50	63	63	63	66	54	66	54	49	57	**59**
Lemsford	68	58	52	58	69	55	59	48	48	44	**56**
Hague	75	68	58	61	59	55	59	54	51	50	**59**
Fenton	45	43	51	45	45	40	41	38	43	47	**44**
Estuary	44	47	44	52	48	48	49	46	44	43	**47**
Lancer	33	33	34	37	34	32	40	31	37	39	**35**
Wollaston Barge			5	5	6	5	5	5	5	5	**5**
Total	**1 261**	**1 152**	**1 204**	**1 307**	**1 255**	**1 171**	**1 276**	**1 184**	**1 165**	**1 209**	**1 218**

Appendix E

Historic Passenger Volumes

Ferry	2000	2001	2002	2003	2004	2005	2006	Average
Clarkboro	69 292	98 654	80 526	88 909	99 892	95 977	107 442	**91 527**
Paynton	60 119	55 475	50 577	56 014	57 743	54 100	46 889	**54 417**
Riverhurst	100 979	90 056	70 700	66 422	63 193	51 692	42 213	**69 322**
Weldon	N/A	49 555	44 007	48 249	54 082	51 835	52 851	**50 097**
St.Laurent	N/A	N/A	N/A	41 656	38 612	33 252	33 897	**36 854**
Cecil	N/A	24 098	22 112	28 819	24 310	24 015	23 052	**24 401**
Wingard	24 417	33 260	21 271	28 299	23 954	21 305	24 725	**25 319**
Lemsford	21 548	28 651	18 050	19 129	17 797	15 406	14 708	**19 327**
Hague	13 705	22 221	17 040	18 254	19 189	14 580	15 885	**17 268**
Fenton	N/A	13 236	10 835	11 909	12 209	12 517	14 341	**12 508**
Estuary	19 152	18 045	14 631	14 728	16 435	13 156	14 266	**15 773**
Lancer	13 668	6 113	9 992	13 174	13 090	10 694	12 662	**11 342**
Total	**322 880**	**439 364**	**359 741**	**435 562**	**440 506**	**398 529**	**402 931**	399 930